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## MICROBIOME R&D AND BIOSTIMULANTS &

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### Implication of *Pseudomonas spp.* in stimulation of bean germination and common bean blight biocontrol in western Algeria

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**Problematic:** The work focused on the determination of functional diversity of soil bacteria; study their effects on seed germination and biological control of common bean (*Phaseolus vulgaris* L). The identification of the isolates based on physiological and biochemical characters and BOX-PCR followed by qualitative and/or quantitative analysis of their secondary metabolites. 50 soil bacteria isolates were affected to the two groups of fluorescent Pseudomonads (76%) and non-fluorescent Pseudomonads (24%). The UPGMA method showed five phenons of carbon sources assimilation; at the time that BOX-PCR profiling resulted in 5 clusters characterized by 29 different applotypes. (66%) isolates induced phosphate solubilization; (24%) were HCN producers, (21%) showed IAA production and all isolates had produced siderophores. *In vitro* antibacterial activity against Xapf results in the screening of two isolates P25 *P. aeruginosa* characterized by an inhibition zone of (26.67±2.31 mm) and P7 *P. cepatia* (24±0 mm). *In vivo* biological control of Xapf revealed that the two isolates reduced significantly bean common blight intensity. Isolate P7 was the highest efficiency. Coinoculation of the two isolates was not very effective at controlling Xapf. Study of the effects of the two isolates on bean seed germination revealed that isolate P7 was the highest effect on seed germination and root growth properties, then isolate P25 or the coinoculation of the two bacteria.

**Conclusion:** Bacterial isolates could play a crucial role in the biocontrol of beans and the enhancement of seed germination, thus increase crop yield.

#### Biography

El Hafid Nabti was born on 25<sup>th</sup> June 1977 in Barbacha-Bejaia (Algeria). He received a Graduate Studies Diploma in Microbiology in September 2000 at the University of Bejaia. He obtained his Master Degree in Microbiology followed by a Doctorate of Sciences in Microbiology respectively in May 2003 and June 2008. He stayed at the same university where he launched his career as a lecturer and researcher. His work focuses on rhizospheric microbiology, restoration of plant growth under abiotic stress, the use of bacteria and algae in stimulating cereals growth. Biocontrol, bioremediation, microbial ecology and agricultural microbiology are also his areas of interest.

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